

## Remarks

### I. Introduction

Claims 1 to 4 are pending in the present application. In view of the foregoing amendments and the following remarks, it is respectfully submitted that all of the presently pending claims are allowable, and reconsideration is respectfully requested.

Applicants thank the Examiner for considering the previously filed Information Disclosure Statement, PTO-1449 paper and cited references.

### II. Rejection of Claims 1 to 4 Under 35 U.S.C. § 112

Claims 1 to 4 were rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically, the Office Action contends that the recitation of "fully drawn and undrawn synthetic fibers" raises an issue of new matter.

The present application indicates that it is a stated objective of the present invention to produce a filter material in which even under the influence of mechanical and/or thermal stresses during filtration, the spacers do not change their shape and remain stable during the entire service life. Specification at p. 2, lines 9-13. This is achieved in part by the step of forming a single fibrous web "from drawn and undrawn synthetic fibers." Specification at p. 2, lines 15-16. While the Specification does not specifically state that the web is formed from fully drawn and undrawn synthetic fibers, Applicants maintain that it is inherent that the web of the present invention be formed from fully drawn and undrawn synthetic fibers. Only fully drawn fibers, e.g., having a very high melting point and softening point of more than 220° C, enable the fiber structure to be maintained during calendaring of the non-woven fabric in accordance with the process of the present invention, thereby providing the non-woven fabric with satisfactory stability and high porosity. Applicant refers to Section 2163.07(a) of the M.P.E.P., which states:

By disclosing in a patent application a device that inherently performs a function or has a property, operates according to a theory or has an advantage, a patent application necessarily discloses that function, theory or advantage, even though it says

nothing explicit concerning it. The application may later be amended to recite the function, theory or advantage without introducing prohibited new matter.

M.P.E.P. § 2163.07(a) (emphasis added) (citing *In re Reynolds*, 443 F.2d 384, 170 U.S.P.Q. 94 (C.C.P.A. 1971); *In re Smythe*, 480 F.2d 1376, 178 U.S.P.Q. 279 (C.C.P.A. 1973)). Thus, in order to meet the stated objective of the present invention, the fibers are necessarily fully drawn. Therefore, the amendment of claim 1 to recite the step of “forming a single fibrous web from fully drawn and undrawn synthetic fibers” did not introduce new matter.

In view of the foregoing, it is respectfully submitted that claims 1 to 4 fully comply with the requirements of 35 U.S.C. § 112, and withdrawal of this rejection is therefore respectfully requested.

### **III. Rejection of Claims 1 to 4 Under 35 U.S.C. § 112**

Claims 1 to 4 were rejected under 35 U.S.C. § 112, second paragraph as indefinite for failing to particularly point out and distinctly claim the subject matter of the invention. With respect to claim 1, the Office Action contends that it is unclear whether the adverb “fully” modifies both “drawn and undrawn synthetic fibers” or whether it modifies only “drawn synthetic fibers”. Office Action at pp. 2-3.

Applicants have amended claim 1 to replace the phrase “fully drawn and undrawn synthetic fibers” with the phrase --undrawn and fully drawn synthetic fibers--.

In view of the foregoing, it is respectfully submitted that claims 1 to 4 fully comply with the requirements of 35 U.S.C. § 112, and withdrawal of this rejection is therefore respectfully requested.

### **IV. Rejection of Claims 1 to 4 Under 35 U.S.C. §103(a)**

Claims 1 to 4 were rejected as being unpatentable under 35 U.S.C. §103(a) over U.S. Patent No 4,496,583 (“Yamamoto”) in view of either U.S. Patent No. 5,232,595 (“Meyer”) or U.S. Patent No. 4,876,007 (“Narou”) and U.S. Patent No. 2,862,542 (“Norton”). The Office Action admits that “[i]t is unclear whether the drawn fibers taught by Yamamoto et al[.] are “fully drawn.” Office Action at p. 3. However, the Office Action contends that “it would have been obvious in the art to use fully drawn fibers in the process of Yamamoto et al[.] because it is a common practice in the art to fully draw fibers in order to form highly oriented fibers (i.e. high crystallinity and high strength) []

and because it is well within the purview of choice in the art to choose between only two possible alternatives: use fully drawn fibers or not fully drawn fibers.” Office Action at p. 3. Applicant respectfully submits that the combination of Yamamoto, Meyer, Narou and Norton does not render obvious the present claims for the following reasons.

Claim 1, as amended, relates to a method for manufacturing a pleated filter material from a thermally bonded non-woven fabric. Claim 1 recites that the method includes the step of forming a single fibrous web from undrawn and fully drawn synthetic fibers. Claim 1 also recites that the method includes the step of calendering the single fibrous web in a single calendering step. Furthermore, claim 1 recites that, during the single calendering step, the undrawn fibers in the single fibrous web are bonded in a tension-free manner between profiled calender rolls to form the non-woven fabric, without inhomogeneities over the cross-section of the non-woven fabric and without the use of flat bonding. In addition, claim 1 recites that, during the single calendering step, spacers are formed in the non-woven fabric to thereby form the filter material.

Applicant respectfully submits that the combination of Yamamoto, Meyer, Narou and Norton does not render obvious claim 1 for at least the reason that the combination of Yamamoto, Meyer, Narou and Norton fails to teach or suggest, either separately or in combination, all of the limitations recited in claim 1. For example, the combination of Yamamoto, Meyer, Narou and Norton fails to teach or suggest, either separately or in combination, a method for manufacturing a pleated filter material from a thermally bonded non-woven fabric that includes the step of forming a single fibrous web from undrawn and fully drawn synthetic fibers, as recited in amended claim 1. More specifically, Applicants respectfully maintain that, contrary to the Office Action’s contention, it would not have been obvious to use fully drawn fibers in the process of Yamamoto. Yamamoto describes a process that evidently employs partially-drawn fibers. Specifically, referring to Examples 13 and 14 of Yamamoto which were relied on by the Examiner and the Board in rejecting the claims, Yamamoto describes steps that result in a fiber which is only partially drawn, as evidenced by the fact that the binding ability of the partially drawn fibers is only present at a temperature of 180 degrees C (or at 130 degrees C in Example 14) and at a high pressure. The Office Action disputes the Applicants’ conclusion that these results lead one to believe that the fibers of Yamamoto are only partially drawn by claiming that col. 3, lines 1-21 describes “using undrawn fibers for fiber binders” (emphasis in original). Office Action at p. 5.

However, Applicants do not understand how the Office Actions's assertion that Yamamoto discloses using undrawn fibers for fiber binders supports the Office Action's contention that it would have been obvious to use fully drawn fibers in the process of Yamamoto. In fact, the Office Action provides no support for the assertion that it is a common practice in the art to fully draw fibers, let alone for the contention that it would have been obvious to use fully drawn fibers in the process of Yamamoto.

To establish prima facie obviousness, three criteria must be satisfied. First, there must be some suggestion or motivation to modify or combine reference teachings. In re Fine, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). This teaching or suggestion to make the claimed combination must be found in the prior art and not based on the application disclosure. In re Vaeck, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). Second, there must be a reasonable expectation of success. In re Merck & Co., Inc., 800 F.2d 1091, 231 U.S.P.Q. 375 (Fed. Cir. 1986). Third, the prior art reference(s) must teach or suggest all of the claim limitations. In re Royka, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974). Since the combination of Yamamoto, Meyer, Narou and Norton does not teach, or even suggest, all of the limitations of claim 1 as more fully set forth above, it is respectfully submitted that the combination of Yamamoto, Meyer, Narou and Norton does not render obvious claim 1. It is therefore respectfully submitted that claim 1 is allowable for these reasons. Withdrawal of this rejection is therefore respectfully requested.

It is respectfully submitted that the cases of In re Fine, supra, and In re Jones, 21 U.S.P.Q.2d 1941 (Fed. Cir. 1992), make plain that the Office Action's generalized assertions that it would have been obvious to modify or combine the references do not properly support a § 103 rejection. It is respectfully submitted that those cases make plain that the Office Action reflects a subjective "obvious to try" standard, and therefore does not reflect the proper evidence to support an obviousness rejection based on the references relied upon. In particular, the Court in the case of In re Fine stated that:

The PTO has the burden under section 103 to establish a *prima facie* case of obviousness. It can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. This it has not done. . . .

....

**Inst ad, the Examiner relies on hindsight in reaching his obviousness determination. . . . One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.**

In re Fine, 5 U.S.P.Q.2d at 1598 to 1600 (citations omitted; italics in original; emphasis added). Likewise, the Court in the case of In re Jones stated that:

Before the PTO may combine the disclosures of two or more prior art references in order to establish *prima facie* obviousness, there must be some suggestion for doing so, found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. . . .

**Conspicuously missing from this record is any evidence, other than the PTO's speculation (if it be called evidence) that one of ordinary skill . . . would have been motivated to make the modifications . . . necessary to arrive at the claimed [invention].**

In re Jones, 21 U.S.P.Q.2d at 1943 & 1944 (citations omitted; italics in original).

That is exactly the case here since it is believed and respectfully submitted that the present Office Action offers no evidence whatsoever, but only conclusory hindsight, reconstruction and speculation, which these cases have indicated does not constitute evidence that will support a proper obviousness finding. Unsupported assertions are not evidence as to why a person having ordinary skill in the art would be motivated to modify or combine references to provide the claimed subject matter of the claims to address the problems met thereby. Accordingly, the Office must provide proper evidence of a motivation for modifying or combining the references to provide the claimed subject matter. In this regard, the Office Action admits that "it is unclear whether the drawn fibers taught by Yamamoto et al[.] are 'fully drawn'." Office Action at p. 3. However, the Office Action contends that "it is well within the purview of choice in the art to choose between only two possible alternatives: use fully drawn fibers or not fully drawn fibers." Office Action at p. 3. Applicant respectfully disagrees since the essential argument being made is that since Yamamoto is silent with respect to fully drawn fibers, it would have been obvious to combine the process described by Yamamoto with fully drawn fibers. In fact, there are an infinite number of possible alternatives that may have been chosen by a person skilled in the art, namely the entire range, between undrawn and fully drawn, over which fibers may be partially drawn.

More recently, the Federal Circuit in the case of In re Kotzab has made plain that even if a claim concerns a “technologically simple concept” -- which is not the case here -- there still must be some finding as to the “specific understanding or principle within the knowledge of a skilled artisan” that would motivate a person having no knowledge of the claimed subject matter to “make the combination in the manner claimed,” stating that:

In this case, the Examiner and the Board fell into the hindsight trap. The idea of a single sensor controlling multiple valves, as opposed to multiple sensors controlling multiple valves, is a technologically simple concept. With this simple concept in mind, the Patent and Trademark Office found prior art statements that in the abstract appeared to suggest the claimed limitation. But, there was no finding as to the specific understanding or principle within the knowledge of a skilled artisan that would have motivated one with no knowledge of Kotzab's invention to make the combination in the manner claimed. In light of our holding of the absence of a motivation to combine the teachings in Evans, we conclude that the Board did not make out a proper prima facie case of obviousness in rejecting [the] claims . . . under 35 U.S.C. Section 103(a) over Evans.

In re Kotzab, 55 U.S.P.Q.2d 1313, 1318 (Fed. Cir. 2000) (emphasis added). Again, it is believed that there have been no such findings.

In summary, it is respectfully submitted that the combination of Yamamoto, Meyer, Narou and Norton does not render obvious amended claim 1.

As for claims 2 to 4, which depend from claim 1 and therefore include all of the limitations of claim 1, it is respectfully submitted that the combination of Yamamoto, Meyer, Narou and Norton does not render obvious these dependent claims for at least the same reasons given above in support of the patentability of claim 1. In re Fine, supra (any dependent claim depending from a non-obvious independent claim is non-obvious).

## **V. Rejection of Claims 1 to 4 Under 35 U.S.C. § 103(a)**

Claims 1 to 4 were rejected as being unpatentable under 35 U.S.C. §103(a) over Yamamoto in view of either Meyer or Narou and Norton, and further in view of U.S. Patent No. 4,910,064 (“Sabee”). The Office Action contends that “it would have been obvious in the art to fully draw[] fibers in the process of Yamamoto et al[.] because it is old in the art to interchangeably use fully or partially drawn fibers in

forming a nonwoven web for use in making, for instance, filters as taught for example [by] Sabee (col. 6, lines 3-40)." Office Action at p. 4. Applicant respectfully submits that the combination of Yamamoto, Meyer, Narou, Norton and Sabee does not render obvious the present claims for the following reasons.

It is respectfully submitted that claim 1 is not rendered unpatentable for at least the reason that a person skilled in the art would not have been motivated to combine the teachings of Sabee with the teachings of Yamamoto, Meyer, Narou and Norton. While Sabee describes the use of fully drawn fibers, it also states that "[i]n cases where stiffer more rigid webs or fabrics are required, they may be obtained by bonding a majority or all of the continuous filament intersections in a heated calender stack having at least two rolls, at least one of which is heated and temperature controlled." Col. 11, lines 11-15. Sabee further states that "[t]he melt blown fiber deposition layer preferably has a lower melting point or range than the continuous filaments and upon passing through the heated calender rolls soften and fuse or adhere to the continuous filaments [ whereby] [t]he bonding may be accomplished by passing the various webs through bonding rolls, both of which are smooth as an alternate to the previously discussed spot bonding rolls." Col. 11, lines 45-56 (emphasis added). Thus, the use of fully drawn fibers in Sabee may be appropriate for smooth, or flat-bonded, calendering, but not for the method described in claim 1, which recites that during the single calendering step, the undrawn fibers in the single fibrous web are bonded in a tension-free manner between profiled calender rolls to form the non-woven fabric, without the use of flat bonding. It is therefore respectfully submitted that Sabee teaches away from the proposed combination, which excludes flat-bonding, since a person skilled in the art would not have been motivated to combine a reference that describes, in a process employing flat bonding, the use of fully drawn fibers in a process that excludes flat-bonding. It is well settled that a reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention, W.L. Gore & Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 U.S.P.Q. 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984), and that it is improper to combine references where the references teach away from their combination, In re Grasselli, 713 F.2d 731, 743, 218 U.S.P.Q. 769, 779 (Fed. Cir. 1983). The Office Action fails to consider the portions of the cited references that specifically teach away from the proposed combination. Accordingly, it is respectfully submitted that the combination of Sabee with Yamamoto, Meyer, Narou and Norton cannot support the

present rejection.

As for claims 2 to 4, which ultimately depend from claim 1, it is respectfully submitted that the combination of Yamamoto, Meyer, Narou, Norton and Sabee does not render unpatentable these dependent claims for at least the same reasons given above in support of the patentability of claim 1.

**VI. Conclusion**

Attached hereto is a marked-up version of the changes made to the claims by the current Amendment. The attached page is captioned "**Version with Markings to Show Changes Made.**"

It is therefore respectfully submitted that all of the presently pending claims are allowable. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

Respectfully submitted,

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**Version with Markings to Show Changes Made**

**IN THE CLAIMS:**

Claim 1 has been amended without prejudice as follows:

1. (Twice Amended) A method for manufacturing a pleated filter material from a thermally bonded non-woven fabric, comprising :

forming a single fibrous web from undrawn and fully drawn [and undrawn] synthetic fibers;

calendering the single fibrous web in a single calendering step, wherein during the single calendering step, the undrawn fibers in the single fibrous web are bonded in a tension-free manner between profiled calender rolls to form the non-woven fabric, without inhomogeneities over the cross-section of the non-woven fabric and without the use of flat bonding, and wherein during the single calendering step, spacers are formed in the non-woven fabric to thereby form the filter material.